John L. Ford of the Weather Bureau, in charge of the meteorological detail on the *Pontchartrain*, has supplied an account of that vessel's meeting this storm, near 40° N., 58° W., as the cutter headed for New York. The following is extracted from his account:

Highest winds were estimated at 130 to 150 miles per hour. The pressure reached the lowest point, 28.65 inches (970.2 millibars), about 2:20 a. m., February 24. Winds of force 8 or greater covered the entire period from that time to 10 a. m. the 25th.

During the three hours preceding the passage of the cold front the winds were mostly from south-southeast, force 2 to 5, skies somewhat variable with rain showers and frequent distant lightning.

At 2:15 a. m. the wind shifted from south-southeast, 4, to northwest, with gusts of 7, for about one minute, then dropped to west, 4. At 2:20 the wind shifted back to northwest with force from 10 to 12, but seldom less than 11. With this shift in wind heavy rain showers occurred, with severe lightning in the distant southwest. Soon sheets of spray were being carried through the air, making it impossible to see far. The wind continued at velocities over 100 miles per hour until about 5 a. m. At 6:10 a. m. the wind was north-northwest, 70 miles per hour. (The lower limit of force 12 is 75 miles per hour.) It was then light enough to make out a ragged strato-cumulus layer at 150 to 200 feet above the surface. Long heavy swells at the rate of 8 per minute were observed.

During the last days of February and the early days of March another strong storm caused high winds over parts of the western Atlantic. From the Gulf of Mexico, where this storm had shown comparatively little strength on the 25th and 26th, the center moved across Florida during the night of the 26–27th. It was not far to the eastward of Norfolk on the morning of the 28th, and to southeastward of Nantucket at the evening observation. One vessel reported force 11 wind as met about 170 miles to east-southeastward of Norfolk during the 28th.

Some information has been received of the great violence of a storm about the middle of the month over Spain, Portugal, and the waters adjacent to them. As early as the forenoon of the 13th pressure was quite low between the Azores and the Bay of Biscay. This storm center moved eastward and was close to the northwest corner of the Iberian peninsula during the night of the 14–15th, and in about the same position during much of the 15th.

Press dispatches indicate that ships at Lisbon in the Tagus River were injured and some small boats sunk, while 60 persons were sent to hospitals there, due to the storm's havoc. In Spain and Portugal altogether at least 102 persons died, while the damage reached millions of dollars, many crops and valuable trees being ruined. It was considered the worst storm for Portugal since 1848. Though northern Spain apparently felt more severe winds than the southern part of the peninsula, yet even at Gibraltar a freighter broke its moorings and was driven upon the beach.

Three instances of hurricane-force winds (12), noted by Coast Guard cutters over western North Atlantic waters, have already been mentioned. February's fourth instance was connected with this eastern waters storm, the American liner *Siboney* encountering such force during the 15th to westward of Portugal.

Fog.—The available information implies that there was less fog than had occurred during the preceding January; also in those areas where during late winter fog is usually met most frequently the reports indicate somewhat less than February normally brings.

Near the eastern coast of the United States, from Maine to the Carolinas, the fog reports all fall within the period from 7th to 15th inclusive. Two 5° squares of this stretch of coast, about in the latitude of Chesapeake Bay, furnished reports on 3 days each, exceeding all other North Atlantic squares.

Apart from this coastal strip the observations of fog were widely scattered geographically, while in point of time they were well distributed through the month.

OCEAN GALES AND STORMS, FEBRUARY 1941

Vessel	Voyage		Position at time of lowest barometer		Gale began, February	Time of lowest barometer, February	Gale ended, February	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
North Atlantic Ocean			° ′	° ′				*Millibars*					
Chelan, U. S. C. G.	On Station No.1		39 45 N.	59 00 W.	3	1p, 4	5	989.2	SSW	SW, 12	W	SW, 12	S-WSW.
Shenandoah, Am. S. S.	Norfolk	Port Arthur	28 18 N.	79 12 W.	6	7a, 7	7	1,001.7	S	SW, 8	SW	SW, 8	
Republic, U. S. A. T.	New York	Cristobal	36 02 N.	73 56 W.	7	1p, 7	7	989.5	SSE	SSW, 7	W	SSE, 10	SSE-SW.
Panama, Am. S. S.	do	Port au Prince	[1]36 00 N.	74 06 W.	7	2p, 7	7	987.5	SSE	S, 8	NW	S, 9	SSE-NW.
City of Omaha, Am. S. S.	Capetown	Savannah	30 54 N.	78 20 W.	6	2p, 7	7	995.3	SE	SW, 8	WNW	W, 8	SW-NW.
A vessel	New York	Puerto Sucre	33 44 N.	71 00 W.	7	5p, 7	7	995.3	S	S, 9	SW	S, 9	S-SW.
Cosmo, Am. S. S.	do	San Juan	34 48 N.	71 45 W.	7	6p, 7	8	988.8	SSE	SSW, 7	W	SSE, 10	SSE-W.
William G. Warden, Am. S. S.	Baton Rouge	Boston	41 42 N.	69 18 W.	7	2a, 8	8	983.7	SE	SW, 8	WSW	E, 9	SE-WSW.
Chelan, U. S. C. G.	Bermuda	Station No. 1	35 36 N.	64 06 W.	7	2p, 8	8	1,004.7	SSE	SW, 5	SW	S, 10	
Hibueras, Am. S. S.	Puerto Barrios	New Orleans	22 15 N.	86 19 W.	8	8p, 8	9	1,004.7	WSW	S, 3	NNW	NNW, 8	NE-S-WSW.
R. W. Gallagher, Am. S. S.	Boston	Houston	25 06 N.	85 42 W.	8	11p, 8	9	1,003.7	NW	NW, 9	NNW	NW, 9	NW-NNW.
Pontchartrain, U. S. C. G.	On Station No.2		39 42 N.	45 12 W.	9	2p, 10	10	1,009.1	SSW	SW, 9	NW	W, 10	SW-W.
Do	do		38 42 N.	46 00 W.	13	4p, 13	14	1,006.4	NNE	E, 6	NE	NE, 9	NE-E.
Nebraskan, Am. S. S.	New York	Cristobal	32 42 N.	74 54 W.	14	2p, 14	15	1,001.7	S	WSW, 8	NW	WSW, 8	S-W.
Tennessee, Am. S. S.	Providence	Port Arthur	[1]38 42 N.	72 43 W.	15	4a, 15	15	999.0	NNW	NNE, 5	NW	NNW, 9	NE-NNW.
Siboney, Am. S. S.	Lisbon	San Miguel, Azores.	[1]38 28 N.	12 59 W.	15	10a, 15	17	960.4	S	WSW, 10	WSW	NW, 12	S-WSW-N.
Excambion, Am. S. S.	Bermuda	New York	[1]32 56 N.	64 58 W.	15	4p, 15	17	1,000.7	WSW	WSW, 9	NW	WNW, 11	WSW-WNW.
Chelan, U. S. C. G.	On Station No.1		38 28 N.	59 00 W.	14	12m, 16	17	992.9	SSE	WSW, 8	W	W, 11	WSW-W.
Pontchartrain, U. S. C. G.	On Station No.2		38 54 N.	45 54 W.	16	6a, 17	17	999.7	W	WSW, 7	WSW	SW, 8	SW-WSW.
R. W. Gallagher, Am. S. S.	Galveston	New York	34 18 N.	75 30 W.	17	1p, 17	18	998.6	WSW	W, 7	NW	NW, 9	WSW-NW.
Chateau-Thierry, U. S. A. T.	San Juan	Boston	35 00 N.	68 12 W.	17	7p, 17	19	989.2	WSW	WNW, 9	WNW	WNW, 9	WSW-WNW.
Monroe, Am. S. S.	New York	San Juan	33 18 N.	70 54 W.	17	7p, 17	18	998.0	SW	SW, 9	WNW	SW, 9	SW-NW.
Chelan, U. S. C. G.	On Station No.1		38 38 N.	59 10 W.	18	4a, 18	19	983.1	S	SW, 9	W	W, 11	S-SW.
Pontchartrain, U. S. C. G.	On Station No.2		39 06 N.	45 30 W.	18	8p, 18	19	1,004.7	SSW	S, 11	SW	S, 11	S-SW.
Chelan, U. S. C. G.	On Station No.1		38 18 N.	60 00 W.	20	2p, 20	21	999.0	W	W, 8	W	W, 10	None.
Bibb, U. S. C. G.	Norfolk	Station No. 2	38 30 N.	54 54 W.	20	2a, 21	20	998.6	WNW	WSW, 7	WNW	WNW, 9	W-SW.
Cayuga, U. S. C. G.	On Station No.1		39 00 N.	59 18 W.	24	1a, 24	25	972.9	SSW	SSW, 5	W	NW, 12	SSW-NW.
Pontchartrain, U. S. C. G.	Station No. 2	New York	39 42 N.	58 18 W.	24	2a, 24	25	970.2	SSE	NW, 12	NW	NW, 12	SSE-NW.

See footnotes at end of table.

OCEAN GALES AND STORMS, FEBRUARY 1941—Continued

Vessel	Voyage		Position at time of lowest barometer		Gale began, February	Time of lowest barometer, February	Gale ended, February	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
North Atlantic Ocean—Continued			° ′	° ′				*Millibars*					
Bibb, U. S. C. G.	On Station No. 2		37 42 N.	46 12 W.	24	2a, 25	26	991.2	S.	WSW, 7	NW.	WNW, 11	WSW–W.
Exeter, Am. S. S.	Lisbon	Bermuda	35 18 N.	39 42 W.	25	9p, 25	26	993.2	W.	W, 8	WNW.	WNW, 8	WSW–WNW.
Marques of Comillas, Span. S. S.	do	Havana	38 06 N.	31 54 W.	26	4a, 26	27	999.9	W.	SW, 7	WNW.	WNW, 8	SW–W.
Cayuga, U. S. C. G.	On Station No. 1		38 36 N.	58 42 W.	26	9p, 26	27	1,004.1	WSW.	W, 10	NW.	W, 10	W–NW.
Borinquen, Am. S. S.	New York	San Juan	37 00 N.	72 30 W.	28	7a, 28	[2] 2	990.5	NE.	S, 9	WNW.	S, 9	ENE–S–SW.
Gulfhawk, Am. M. S.	Puerto la Cruz, Venezuela.	New York	36 28 N.	73 10 W.	28	12m, 28	[2] 2	992.2	W.	NW, 10	NW.	NW, 11	W–NW.
San Gil, Pan. S. S.	Cristobal	Philadelphia	[1] 31 30 N.	75 00 W.	28	4p, 28	[2] 1	1,005.4	NW.	NW, 8	N.	NW, 9	
A vessel	Baltimore	Baracoa	33 12 N.	75 06 W.	28	7p, 28	[2] 1	1,003.1	NW.	NW, 8	NW.	NW, 8	
North Pacific Ocean													
Collingsworth, Am. S. S.	Portland, Oreg.	Shanghai	38 36 N.	134 54 E.	[3] 30	4p, 30 [3]	1	1,001.4	SSW.	SSW, 10	NW.	NNW, 11	SSW–var.–NNW.
Kyusyu Maru, Jap. M. S.	Yokohama	San Francisco	47 01 N.	157 08 W.	[3] 31	6a, 1	3	952.9	SSE.	S, 8	SSW.	WNW, 8	E–S.
Buenos Aires Maru, Jap. M. S.	do	Los Angeles	[1] 42 52 N.	163 41 W.	1	6a, 1	3	959.7	WSW.	W, 9	W.	WSW, 9	WSW–W.
Mauna Ala, Am. S. S.	Seattle	Honolulu	45 27 N.	130 51 W.	2	1p, 3	3	985.1	E.	S, 10	SSW.	S, 10	SSE–SW.
Chirikof, U. S. A. T.	Ketchikan	San Francisco	46 36 N.	129 30 W.	2	3p, 3	3	991.5	SSE.	SE, 9	S.	SSE, 10	
Waipio, Am. S. S.	Hilo	Grays Harbor, Wash.	38 42 N.	134 54 W.	2	3p, 3	3	992.9	SSW.	SSE, 5	S.	S, 8	S–SE.
Mauna Loa, Am. S. S.	do	San Francisco	28 48 N.	141 54 W.	3	4a, 4	5	998.6	SSW.	NW, 7	NW.	NW, 8	SW–NW–WNW.
Makiki, Am. S. S.	do	do	34 00 N.	132 00 W.	5	5a, 5	5	993.2	WNW.	WNW, 8	WNW.	WNW, 10	None.
Arctic, U. S. S.	San Francisco	Honolulu	34 30 N.	129 00 W.	4	9a, 5	5	995.9	SSE.	SW, 8	SW.	W, 9	S–WSW.
Maliko, Am. S. S.	do	do	36 20 N.	125 45 W.	5	3p, 5	6	993.2	SE.	SE, 8	SE.	SE, 9	SE–WSW.
Huguenot, Am. S. S.	Los Angeles	Seattle	40 40 N.	124 48 W.	5	4p, 5	5	996.3	SE.	SE, 9	SE.	SE, 9	None.
Chirikof, U. S. A. T.	Ketchikan	San Francisco	[1] 41 53 N.	126 07 W.	5	8p, 5	5	991.9	SE.	SE, 9	SE.	SE, 10	
Arctic, U. S. S.	San Francisco	Honolulu	33 00 N.	131 54 W.	6	11a, 6	7	1,004.4	SSW.	WSW, 7	SW.	SW, 8	SSW–WSW.
Maliko, Am. S. S.	do	do	34 12 N.	134 00 W.	7	3a, 7	7	1,003.1	WSW.	SSW, 6	SW.	SW, 9	SSW–WSW.
West Kyska, Am. S. S.	Longview	Los Angeles	44 42 N.	124 24 W.	8	10a, 8	8	1,007.8	ESE.	ESE, 7	SSE.	ESE, 8	Steady.
Collingsworth, Am. S. S.	Shanghai	Hong Kong	22 24 N.	115 12 E.	8	8a, 9	9	1,016.9	NNE.	ENE, 6	ENE.	NNE, 8	NNE–ENE.
Maliko, Am. S. S.	San Francisco	Honolulu	31 12 N.	139 00 W.	9	9p, 8	9	1,007.5	SW.	SSW, 5	W.	W, 8	SSW–WSW.
West Kyska, Am. S. S.	Longview	Los Angeles	42 54 N.	124 36 W.	9	5a, 9	9	995.6	SSE.	SSE, 10	WSW.	SSE, 10	SSE–WSW.
Winkler, Pan. M. S.	San Francisco	Yokohama	[1] 30 37 N.	161 10 E.	8	6a, 9	9	1,002.4	ESE.	SE, 8	NNW.	W, 9	SE–SSW–NNW.
Mindanao, Phil. S. S.	Manila	Los Angeles	31 12 N.	164 30 E.	9	2p, 9	9	1,002.0	S.	SSW, 5	SSW.	S, 8	SSW–NW.
Nemaha, Am. S. S.	Los Angeles	Osaka	29 18 N.	170 00 E.	9	9p, 9	9	1,008.8	SSE.	S, 9	S.	S, 9	S–W.
Winkler, Pan. M. S.	San Francisco	Yokohama	[1] 31 36 N.	153 48 E.	10	4a, 11	11	1,009.5	SSE.	WSW, 7	N.	NW, 8	S–NW.
West Kyska, Am. S. S.	Longview	Los Angeles	37 18 N.	122 24 W.	10	9a, 11	11	988.8	SE.	SW, 8	WSW.	SSE, 10	NE–SW.
Collingsworth, Am. S. S.	Hong Kong	Manila	19 24 N.	116 24 E.	11	8p, 11	12	1,014.6	NE.	NE, 7		ENE, 8	
Capillo, Am. S. S.	Dahican, P. I.	Honolulu	43 06 N.	171 42 W.	11	6a, 12	14	984.4	SW.	ENE, 5	SSW.	S, 9	ENE–NNW.
Nitlei Maru, Jap. M. S.	Konmon, Japan.	Los Angeles	46 51 N.	173 25 W.	13	12m, 13	13	970.2	SE.	S, 9	SW.	S, 9	SSE–SSW.
California Standard, Pan. M. S.	Estero Bay	Yokohama	34 58 N.	178 35 E.	12	12m, 12	13	999.3	S.	W, 8	W.	W, 10	WSW–W.
Do	do	do	35 04 N.	174 50 E.	13	6a, 14	15	994.2	SW.	SSW, 10	W.	SSW, 10	SW–SSW–W.
Kamakura Maru, Jap. M. S.	San Francisco	Honolulu	28 36 N.	145 48 W.	16	2p, 16	17	1,011.9	NW.	W, 7	NW.	NW, 8	WSW–WNW.
Matsonia, Am. S. S.	do	do	29 42 N.	142 36 W.	16	3a, 17	17	999.7	W.	W, 8	NW.	W, 9	
Neches, U. S. S.	Pearl Harbor	San Diego	27 00 N.	138 30 W.	17	3p, 17	17	1,006.8		WNW, 8		WNW, 8	WNW–NW.
Winkler, Pan. M. S.	Yokohama	San Francisco	35 00 N.	151 42 E.	20	2a, 21	21	998.6	SSE.	SSW, 8	NW.	S, 9	S–SW.
Waipio, Am. S. S.	Portland, Oreg.	Honolulu	35 00 N.	143 18 W.	21	8p, 21	21	1,007.1	S.	S, 8	WNW.	S, 8	S–WNW.
North Sea, Am. S. S.	Seattle	Sitka	54 36 N.	130 42 W.	23	4p, 23	[4] 1,010.5	E.	N, 9	N.	N, 9	E–N.	
Porter, U. S. S.	Los Angeles	Pearl Harbor	[1] 27 42 N.	141 57 W.	26	7p, 26	27	1,000.3	SW.	WNW, 11	NW.	WNW, 11	W–WNW.
Hamakua, Am. S. S.	Aberdeen, Wash.	Honolulu	31 24 N.	147 12 W.	26	2p, 26	27	1,001.0	WNW.	WNW, 8	NW.	WNW, 8	W–WNW.
Manoa, Am. S. S.	Los Angeles	do	31 30 N.	128 48 W.	28	9p, 27	28	1,000.3	NW.	W, 6	NW.	NW, 8	S–WNW.
Maliko, Am. S. S.	Honolulu	San Francisco	36 50 N.	125 55 W.	28	11a, 28	28	981.7	SE.	SE, 9	WSW.	SE, 9	SE–WSW.

[1] Position approximate. [2] March. [3] January. [4] Barometer uncorrected.

WEATHER ON THE NORTH PACIFIC OCEAN

By WILLIS E. HURD

Atmospheric pressure.—The most interesting pressure feature on the North Pacific Ocean in February 1941 was the almost continuous presence of low barometer off the west coast of the United States. The condition was well reflected by the abnormally low average barometer on the coast itself. The mean at San Francisco, for instance, was 1,012.2. millibars (29.89 inches) which is 7.1 millibars (0.21 inch) below the normal of the month.

In the northern Pacific the Aleutian LOW was unusually deep, and at Dutch Harbor the average pressure, 988.7 millibars (29.20 inches), was 13.7 millibars (0.40 inch) below the month's normal. This average is the lowest of record for February at the station since 1927. The lowest barometer reported on ship was 952.9 millibars (28.14 inches), read on the Japanese M. S. *Kyusyu Maru* on the 1st, near 47° N., 157° W. A similarly low reading was made at St. Paul Island on the 11th.

Pressures below normal occurred in all upper Pacific waters, down the American coast to the Tropics, and then westward to Honolulu. From Midway Island westward the barometer was abnormally high, with two anticyclonic crests, one near Midway Island and the other east of China.